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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/183,819

10/30/1998

THOMAS H. BAKER

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09/10/2002

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/183,819

Applicant(s)

BAKER ET AL.

Examiner

Julian D. Huffman

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-11,14-41 and 43-51 is/are pending in the application.
- 4a) Of the above claim(s) 37-41 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,19-25,27-36 and 43-49 is/are allowed.
- 6) ☒ Claim(s) 1,2,6,8,10,11,14,26,50 and 51 is/are rejected.
- 7) ☒ Claim(s) 9 and 15-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Claims 37-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 50-51 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not teach that the low positioning accuracy is on the order of 0.5mm to 2.5mm (1/50 to 1/10 inch).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2853

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 8, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beauchamp ('646) in view of Vincent ('059) and Hirano et al.

Beauchamp discloses an incremental printer for forming desired images on a printing medium, by construction from individual marks in arrays, said printer comprising:

at least one colorant-placing module for marking on the medium (fig. 2, any one of elements 302, 304, 306, or 308);

a colorant carriage for holding and moving the modules over such medium (300);

a motor and drive train for propelling the carriage over the medium (310); and

a first sensor for determining condition or relative positioning of the at least one colorant-placing module (element 400).

Beauchamp does not disclose a second sensor for making color measurements.

However, Vincent discloses a sensor mounted to a carriage for making color measurements (column 4, lines 36-54).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the sensor disclosed by Vincent into the invention of Beauchamp for the purpose of correcting for color errors caused by dynamic changes in the printing mechanism or the characteristics of the media (column 4, lines 36-46).

In the invention of Beauchamp in view of Vincent the carriage would have to be in a stationary position to accurately obtain measurements and it would have been obvious to one having ordinary skill in the art at the time the invention was made to hold

Art Unit: 2853

the carriage stationary while taking measurements so as to increase the accuracy of the measurements.

Beauchamp in view of Vincent do not disclose that the second sensor is mounted independently of the first sensor and on a second carriage which is detachable from the first carriage.

However, Hirano et al. provides a general teaching for solving a similar problem as the applicant, that is, reducing weight by providing two modes, the first mode allowing one carriage mounted device to traverse along the print media and the second mode allowing a second device mounted on a separate auxiliary carriage to be attached to the first carriage such that both devices may be traversed along the print media (abstract), wherein the auxiliary carriage has substantially no drive train other than that of the colorant-carriage drive train (column 5, lines 40-46, fig. 1, where it may be seen that the auxiliary carriage is not connected to the drive belt).

The invention of Hirano et al. is capable of being programmed to control the carriages for substantially stationary measurement of a mark array on the medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Hirano et al. into the invention of Beauchamp in view of Vincent, thereby employing the use of the dual separable/attachable carriages taught by Hirano et al. and, instead of mounting both sensors "on" the same carriage, mounting one sensor on each carriage, for the purpose of, as taught by Hirano et al., reducing weight during normal printing operations by

allowing the use of two modes, one where both carriages are traversed along the print media and another where only one carriage is traversed (column 2, lines 1-5).

The limitation of low positioning accuracy and low velocity is given little patentable weight since the term low is relative with no basis for comparison, further the positioning accuracy and velocity which would be required for roughly centering the sensor is not known. Thus any velocity or positioning accuracy would disclose this limitation and since the prior art must provide some velocity and positioning accuracy, the prior art discloses this limitation.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beauchamp in view of Vincent and Hirano et al. as applied to claim 1 above and further in view of Vincent ('518).

Beauchamp in view of Vincent '671 and Hirano et al. do not disclose a means for excluding ambient light from the second colorimetric sensor during the making of color measurements.

Vincent '518 discloses the use of a hood surrounding a colorimeter for excluding ambient light from the sensor (column 9, lines 33-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Vincent '518 into the invention of Beauchamp in view of Vincent and Hirano et al. for the purpose of preventing stray light from interfering with the detection process.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beauchamp in view of Vincent and Hirano et al. as applied to claim 1 above and further in view of Lloyd et al. (U.S. 5,508,826).

Beauchamp in view of Vincent and Hirano et al. do not disclose means for presenting a color reference target to the sensor.

Lloyd et al. discloses a self-calibrating color printer and further teaches that first a sensor is calibrated by scanning a reference target within the movement range of the sensor assembly, then test patches printed by the printer are sensed to correct printing operations (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Lloyd et al. into the invention of Beauchamp in view of Vincent and Hirano et al. thereby obtaining the invention claimed for the purpose of providing a means to calibrate the sensor and increase the accuracy of the measurements.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vincent ('059) in view of Bauer et al.

Vincent discloses :

an ink drop placing module (column 4, lines 52-54);

at least one colorimetric sensor with an optical surface for measuring characteristics of printed images (10); and

an automatic microprocessor for using characteristics measured by the sensor to refine operation of the ink drop placing module to optimize the quality of images (column 4, lines 10-46).

Vincent does not disclose a door for protecting the surface of the sensor when not in use and a mechanism for automatically opening the door before use of the sensor and closing the door after use of the sensor.

However, Bauer et al. discloses this (column 8, lines 7-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Bauer et al. into the invention of Vincent. The reason for performing the modification would have been to protect the sensor from contaminants.

Allowable Subject Matter

9. Claims 7, 19-25 and 27-36 and 43-49 are allowed.

Claims 9 and 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claims 7, 9, 17-25, the prior art of record does not disclose a mechanism for advancing the hood along the sensing direction towards such medium.

With regards to claims 27-36, the prior art of record does not disclose a means for measuring at least one absolute color reference when the door is not open to admit color characteristics of the previously received ink to the sensor.

With regards to claims 15, 16 and 43-49, the prior art of record does not disclose the reference target carried on the moving carriage.

Response to Arguments

10. Applicant's argument that Hirano does not disclose use of the carriage intercoupling to move an auxiliary carriage into position for a stationary operation is not persuasive. Beauchamp and Vincent disclose sensors for performing measurements. It would have been obvious to one having ordinary skill in the art at the time the invention was made to stop the carriage movement while performing the measurements to increase accuracy of the results and such an operation is believed to be inherent and therefore necessary in Beauchamp and Vincent, since they would have to move the sensor to a measurement position, then take a measurement while the sensors are stationary and then move the sensor to the next position. Further, the system of Hirano et al. is capable of such controlled movement.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's arguments with regards to the objections to claims 8 and 14, the limitations of "low positional accuracy" and "low velocity" are relative terms.

These limitations do not render the claims allowable since they do not clearly define any structure over that of the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (703) 308-6556. The examiner can normally be reached on Monday through Friday from 9:30 a.m. to 6:00 p.m.

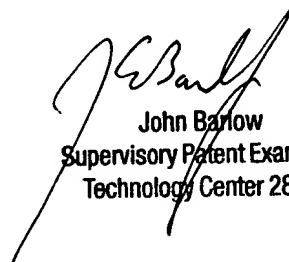
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached at (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722. Faxes requiring the immediate attention of the examiner may be sent directly to the examiner at (703) 746-4386. Note that this number will not automatically send a confirmation that the fax was received.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JH

August 27, 2002



John Barlow
Supervisory Patent Examiner
Technology Center 2800